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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/571,296

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Haruo Yamashita

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EXAMINER

LEIBY, CHRISTOPHER E

ART UNIT

PAPER NUMBER

2629

NOTIFICATION DATE

DELIVERY MODE

04/01/2011

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

ddalecki@wenderoth.com
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Office Action Summary	Application No. 10/571,296	Applicant(s) YAMASHITA ET AL.	
	Examiner CHRISTOPHER E. LEIBY	Art Unit 2629	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 December 2010.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 9, 12, 17 and 21-25 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 9, 12, 17 and 21-25 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 May 2010 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Detailed Action

1. **Claims 9, 12, 17, and 21-25** are pending.

Continued Examination Under 37 CFR 1.114

2. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 12/29/2010 has been entered.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 9-10, 12, and 21-25 rejected under 35 U.S.C. 103(a) as being obvious over **Hansen** (US Patent 6,069,597).

Regarding **independent claim 9**, Hansen discloses a visual processing device comprising:

a parameter outputter for determining an adjustment parameter according to ambient light and for outputting the adjustment parameter (*figure 9 reference*

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ambient light sensor 580 for sensing ambient light output to comparison circuit 590 which creates an adjusted brightness signal in correspondence with the ambient light);

a spatial processor for spatially processing a plurality of pixels surrounding a target pixel of an input image signal, so as to output a processed signal (*figures 4 and 9 reference 300 which processes spatially each target pixel and its surrounding pixels*); and

a visual processor for receiving the input image signal, the processed signal and the adjustment parameter, for determining a conversion characteristic according to the processed signal, for adjusting the determined conversion characteristic to an adjusted conversion characteristic according to the adjustment parameter, and for converting the target pixel of the input image signal according to the adjusted conversion characteristic, so as to output an output converted signal, the visual processing device including a hardware processor (*figure 4 reference 300, brightness control circuit of figure 9 which also performs the function of the spatial processor, wherein one shot circuit 325 determines the length/conversion characteristic for an image signal in accordance with the ambient light as shown in figure 9 wherein the brightness voltage signal is created by a comparison circuit outputted to the brightness control circuitry, wherein the circuitry comprises PWM enable signals used to either control the brightness on length of the on time by the select rows or modify the display data through the data columns a selection of a modified row or column is a selection of a pixel and surrounding pixels, also reference column 14 lines 23-38*),

wherein the visual processor determines the conversion characteristic, such that, with respect to a specific brightness of the input image signal and as

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the brightness of the processed signal increases (*figure 4 reference 312*), a value of the output converted signal *increases (figure 4 and figure 9 wherein if the ambient light increases the signal 312 increases increasing the on time of the row/column via output signal 216; further when the ambient light decreases the signal 312 also decreases; the row on time window is generated in respect to the brightness control circuitry 300 with the added/subtracted value of the ambient light sensor via the comparison circuit, column 8 lines 21-45, to the output signal 216)*, and

wherein the visual processor adjusts the determined conversion characteristic, such that, according to the adjustment parameter, as a brightness of the ambient light increases, at least one of a brightness and a local contrast of the output converted signal increases (*column 8 lines 35-37 wherein the average brightness is linearly proportional to the row on-time meaning as ambient light increases brightness of the display will also increase*).

Hansen specifically discloses that the row on times (*output signal figure 4 reference 216*) decreases if the brightness voltage signal created by the output of the comparison circuit (*processed signal figure 9 reference 312*) also decreases. Further the output signal, 216, will always decrease when the corresponding processed signal, 312, decreases. Hansen describes that the brightness voltage signal increases and decreases respectively as the detected ambient light increases and decreases respectively.

It would have been obvious to one skilled in the art at the time of the invention that the method of which a brightness voltage signal reflects the value of the detected ambient light is of a design preference wherein the value may be

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inversely related to the ambient light making the processed signal increase as the ambient light decreases making the output signal also decreasing enabling the benefit of a lower brightness voltage during prolonged periods of high ambient light (such as those prevalent in office buildings etc.).

Regarding **claim 12**, Hansen discloses a visual processing device, wherein the output converted signal generated by enhancing a brightness of the input image signal based on a contrast between the processed signal and the input image signal (*figure 9 reference 300 and 240 wherein a brightness signal converted to be applied to the column driver adjusts the pixel brightness image signal to be output by the column driver*), and increases the degree of enhancement of the brightness of the input image signal as the brightness of the ambient light becomes high based on the adjustment parameter (*figure 9 reference ambient light (brightness control circuit 300 outputs a PWM signal in respect to the ambient light signal 585 and brightness voltage signal 312)*).

Regarding **independent claim 21**, Hansen discloses an image display device (*abstract*) comprising:

a parameter outputter for determining an adjustment parameter according to ambient light and for outputting the adjustment parameter (*figure 9 reference ambient light sensor 580 for sensing ambient light output to comparison circuit 590 which creates an adjusted brightness signal in correspondence with the ambient light*);

a transformation portion (*figure 9*) including:

a spatial processor for spatially processing a plurality of pixels surrounding a target pixel of an input image signal, so as to output a processed signal (*figures*

4 and 9 reference 300 which processes spatially each target pixel and its surrounding pixels);
and

a visual processor for receiving the input image signal, the processed signal and the adjustment parameter, for determining a conversion characteristic according to the processed signal, for adjusting the determined conversion characteristic to an adjusted conversion characteristic according to the adjustment parameter, and for converting the target pixel of the input image signal according to the adjusted conversion characteristic, so as to output an output converted signal, *(figure 4 reference 300, brightness control circuit of figure 9 which also performs the function of the spatial processor, wherein one shot circuit 325 determines the length/conversion characteristic for an image signal in accordance with the ambient light as shown in figure 9 wherein the brightness voltage signal is created by a comparison circuit outputted to the brightness control circuitry, wherein the circuitry comprises PWM enable signals used to either control the brightness on length of the on time by the select rows or modify the display data through the data columns a selection of a modified row or column is a selection of a pixel and surrounding pixels, also reference column 14 lines 23-38), and*

a display unit operable to display the output converted signal *(figure 3 reference 100 also shown as 125 in figure 2),*

wherein the visual processor determines the conversion characteristic, such that, with respect to a specific brightness of the input image signal and as the brightness of the processed signal increases *(figure 4 reference 312), a value of the output converted signal increases (figure 4 and figure 9 wherein if the ambient light increases the signal 312 increases increasing the on time of the row/column via output signal 216; further when the ambient light decreases the signal 312 also decreases; the row on time*

window is generated in respect to the brightness control circuitry 300 with the added/subtracted value of the ambient light sensor via the comparison circuit, column 8 lines 21-45, to the output signal 216), and

wherein the visual processor adjusts the determined conversion characteristic, such that, according to the adjustment parameter, as a brightness of the ambient light increases, at least one of a brightness and a local contrast of the output converted signal increases (*column 8 lines 35-37 wherein the average brightness is linearly proportional to the row on-time meaning as ambient light increases brightness of the display will also increase*).

Hansen specifically discloses that the row on times (*output signal figure 4 reference 216*) decreases if the brightness voltage signal created by the output of the comparison circuit (*processed signal figure 9 reference 312*) also decreases. Further the output signal, 216, will always decrease when the corresponding processed signal, 312, decreases. Hansen describes that the brightness voltage signal increases and decreases respectively as the detected ambient light increases and decreases respectively.

It would have been obvious to one skilled in the art at the time of the invention that the method of which a brightness voltage signal reflects the value of the detected ambient light is of a design preference wherein the value may be inversely related to the ambient light making the processed signal increase as the ambient light decreases making the output signal also decreasing enabling the benefit of a lower brightness voltage during prolonged periods of high ambient light (such as those prevalent in office buildings etc.).

Regarding **claim 22**, Hansen discloses an image display device, wherein the parameter outputter comprises a brightness detection unit operable to detect the brightness of the display environment of the display unit, and output the adjustment parameter in accordance with the brightness of the display environment detected by the brightness detection unit (*figure 9 reference ambient light sensor*).

Regarding **independent claims 23-25**, Hansen discloses a visual processing method and processor used for an image output device (*figure 8 reference 501*) and a non-transitory computer-readable recording medium having an image processing program recorded thereon (*wherein figure 9 discloses hardware, a program is inherent to make the hardware work being stored on a medium for the hardware to use*), the processor executing a process/method/program of:

determining an adjustment parameter according to ambient light (*figure 9 reference ambient light sensor 580 for sensing ambient light output to comparison circuit 590 which creates an adjusted brightness signal in correspondence with the ambient light*);

spatially processing a plurality of pixels surrounding a target pixel of an input image signal to obtain a processed signal(*figures 4 and 9 reference 300 which processes spatially each target pixel and its surrounding pixels*); and

performing visual processing, via a hardware processor, by receiving the input image signal, the processed signal and the adjustment parameter, by determining a conversion characteristic according to the processed signal, by adjusting the determined conversion characteristic to an adjusted conversion characteristic according to the adjustment parameter, and by converting the

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target pixel of the input image signal according to the adjusted conversion characteristic, so as to output an output converted signal (*figure 4 reference 300, brightness control circuit of figure 9 which also performs the function of the spatial processor, wherein one shot circuit 325 determines the length/conversion characteristic for an image signal in accordance with the ambient light as shown in figure 9 wherein the brightness voltage signal is created by a comparison circuit outputted to the brightness control circuitry, wherein the circuitry comprises PWM enable signals used to either control the brightness on length of the on time by the select rows or modify the display data through the data columns a selection of a modified row or column is a selection of a pixel and surrounding pixels, also reference column 14 lines 23-38*),

wherein the performing of the visual processing determines the conversion characteristic, such that, with respect to a specific brightness of the input image signal and as the brightness of the processed signal increases (*figure 4 reference 312*), a value of the output converted signal *increases (figure 4 and figure 9 wherein if the ambient light increases the signal 312 increases increasing the on time of the row/column via output signal 216; further when the ambient light decreases the signal 312 also decreases; the row on time window is generated in respect to the brightness control circuitry 300 with the added/subtracted value of the ambient light sensor via the comparison circuit, column 8 lines 21-45, to the output signal 216)*, and

wherein the performing of the visual processing adjusts the determined conversion characteristic, such that, according to the adjustment parameter, as a brightness of the ambient light increases, at least one of a brightness and a local contrast of the output converted signal increases (*column 8 lines 35-37 wherein the average brightness is linearly proportional to the row on-time meaning as ambient light increases brightness of the display will also increase*).

Hansen specifically discloses that the row on times (*output signal figure 4 reference 216*) decreases if the brightness voltage signal created by the output of the comparison circuit (*processed signal figure 9 reference 312*) also decreases. Further the output signal, 216, will always decrease when the corresponding processed signal, 312, decreases. Hansen describes that the brightness voltage signal increases and decreases respectively as the detected ambient light increases and decreases respectively.

It would have been obvious to one skilled in the art at the time of the invention that the method of which a brightness voltage signal reflects the value of the detected ambient light is of a design preference wherein the value may be inversely related to the ambient light making the processed signal increase as the ambient light decreases making the output signal also decreasing enabling the benefit of a lower brightness voltage during prolonged periods of high ambient light (such as those prevalent in office buildings etc.).

4. **Claim 17** is rejected under 35 U.S.C. 103(a) as being obvious over **Hansen**, in view of **Weindorf et al.** (US Patent 6,483,245), herein after referred to as Weindorf.

Regarding **claim 17**, Hansen discloses a visual processing device, wherein the visual processor has a processing characteristic, such that with respect to the specific brightness of the input image signal, when a value of the processed signal is fixed to a predetermined level, the output converted signal

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becomes larger in value according to a linear line, such that a degree of the linear line decreases as the brightness of the ambient light increases, so that the degree of the linear line is based on the adjustment parameter (*column 8 lines 35-37*).

Hansen discloses wherein the adjustment relationship between ambient light and the converted adjustment input signal/row on time is linear (*column 8 lines 35-37*) and not a downwardly convex curve.

Weindorf discloses wherein brightness adjustment may be performed dependent upon a concave parabolic curve/downwardly convex curve (*figure 6 and column 6 lines 10-27*).

It would have been obvious to one skilled in the art at the time the invention was made to enable Hansen's brightness adjustment display to follow a concave parabolic curve/downwardly convex curve relationship between ambient light and brightness adjustment to enable gradual brightness changes rather than sharp changes which may occur such as when a short period of ambient light change occurs before returning back to the original ambient light level as described by Weindorf (*column 1 lines 33-55*)

Response to Arguments

5. Applicant's arguments with respect to claims have been considered but are moot in view of the new ground(s) of rejection necessitated by amendment.

This action is **non-final**. Examiner will grant an interview at request of applicant to discuss the current status of prosecution.

Conclusion

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to CHRISTOPHER E. LEIBY whose telephone number is (571)270-3142. The examiner can normally be reached on 9 - 5 Monday - Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Alexander Eisen can be reached on 571-272-7687. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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March 23rd, 2011

/Alexander Eisen/

Supervisory Patent Examiner, Art Unit 2629